NEWZEN CONSULTANTS BANGALORE

NEW TECHNOLOGIES TO INNOVATE

NC/QC/YPD/2020-21/W5-KK-DS6 Date: 26-08-2021

1.TEST REPORT ON BITUMINOUS MIXES :
(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for DBM mix sample.
{Project*: Improvements of roads and drains at Kattigenahalli to Kogilu Main and Cross Road in Ward No.05 (Jakkur) Byatarayanapura Sub division.}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s. R.M. Enterprises, Bangalore.

TEST RESULTS

Table 1: Properties of DBM (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (IV Revision)-2001 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1250**	900
2	Marshall Flow at 60°C, mm.	**3.46**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : Babanagara, Cross Rd 03.

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Asst. Executive Engineer
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NEW TECHNOLOGIES TO INNOVATE

NC/QC/YPD/2020-21/W5-KK-DBM7 **Date: 27-08-2021**

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.
{Project*: Improvements of roads and drains at Kattigenahalli to Kogilu Main and Cross Road in Ward No.05 (Jakkur) Byatarayanapura Sub division.}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s. R.M. Enterprises, Bangalore.

TEST RESULTS

B. Type of Construction : **Dense Graded Bituminous Macadam.**
1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **4.53 %**

2. **Gradation Test**
TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)
37.5	**100**	100
26.5	**96.35**	90-100
19.0	**87.10**	71-95
13.20	**72.80**	56-80
4.75	**45.65**	38-54
2.36	**32.05**	28-42
0.300	**18.45**	7-21
0.075	**6.30**	2-8

The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : Babanagara, Cross Rd 05.

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NEW TECHNOLOGIES TO INNOVATE

NC/QC/YPD/2020-21/W5-KK-DS7 **Date: 27-08-2021**

1.TEST REPORT ON BITUMINOUS MIXES :
(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for DBM mix sample.
{Project*: Improvements of roads and drains at Kattigenahalli to Kogilu Main and Cross Road in Ward No.05 (Jakkur) Byatarayanapura Sub division.}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s. R.M. Enterprises, Bangalore.

TEST RESULTS

Table 1: Properties of DBM (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (IV Revision)-2001 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1246**	900
2	Marshall Flow at 60°C, mm.	**3.32**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : Babanagara, Cross Rd 05.

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NEW TECHNOLOGIES TO INNOVATE

NC/QC/YPD/2020-21/W5-KK-BB1 **Date: 20-08-2021**

1. TEST REPORT ON BITUMEN SAMPLE:

Sub: Testing of Bitumen sample VG-30 Grade.
{Project*: Improvements of roads and drains at Kattigenahalli to Kogilu Main and Cross Road in Ward No.05 (Jakkur) Byatarayanapura Sub division.}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s. R.M. Enterprises, Bangalore.
Technical Reference: Ministry of Road Transport and Highways, V Revision, 2013 and IS 73: 1992.

TABLE 1.1 ;

SL No	Details	Test Results	Requirements as per I.S 73 –1992 Specifications
1.	Penetration at 25^0 C	**51.30^0 C**	Min. 45
2.	Ductility Value at 25^0 C	**109.0 cm**	40
3.	Flash point	**236^0 C**	Minimum 220^0 C
4.	Softening point	**50.40^0 C**	Min. 47

The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : Vinayakanagara, 5th Main Road.

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NEW TECHNOLOGIES TO INNOVATE

NC/QC/YPD/2020-21/W5-KK-CB1 **Date: 20-08-2021**

1. TEST REPORT ON COARSE AGGREGATE:

Sub: Testing of Coarse Aggregate used in Bituminous Concrete.
{Project*: Improvements of roads and drains at Kattigenahalli to Kogilu Main and Cross Road in Ward No.05 (Jakkur) Byatarayanapura Sub division.}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s. R.M. Enterprises, Bangalore.

TABLE 1.1 :

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	**22.86 %**	Not more than 24.00 %
2.	Combined Flakiness and Elongation index, %	**27.51 %**	Not more than 35.0 %
3.	Water absorption, %	**0.42%**	Not more than 2.0 %
4.	Specific gravity	**2.62**	-------
5.	Soundness	**5.36%**	Max. 12 % in Sodium Sulphate

The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : Vinayakanagara, 5th Main Road

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NEW TECHNOLOGIES TO INNOVATE

NC/QC/YPD/2020-21/W5-KK-BC1

Date: 23-08-2021

1.TEST REPORT ON BITUMINOUS MIXES :

(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.

{Project*: Improvements of roads and drains at Kattigenahalli to Kogilu Main and Cross Road in Ward No.05 (Jakkur) Byatarayanapura Sub division.}

Ref.: Material testing/PMC/20-21,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: M/s. R.M. Enterprises, Bangalore.

TEST RESULTS

A. Type of Construction : **Bituminous Concrete**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **5.41 %**

2. **Gradation Test**

TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)
19.0	100	100
13.2	97.25	90-100
9.5	82.10	70-88
4.75	66.50	53-71
2.36	51.70	42-58
1.18	40.35	34-48
0.600	34.75	26-38
0.300	23.65	18-28
0.150	17.25	12-20
0.075	8.15	4-10

The result of the materials tested meets the standards and hence can be used for the work.

Sample Collected Site : Vinayakanagara, 5th Main Road

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NEW TECHNOLOGIES TO INNOVATE

NC/QC/YPD/2020-21/W5-KK-BS1 Date: 23-08-2021

1.TEST REPORT ON BITUMINOUS MIXES :
(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for BC mix sample.
{Project*: Improvements of roads and drains at Kattigenahalli to Kogilu Main and Cross Road in Ward No.05 (Jakkur) Byatarayanapura Sub division.}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s. R.M. Enterprises, Bangalore.

TEST RESULTS

Table 1: Properties of BC (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1351**	900
2	Marshall Flow at 60°C, mm.	**3.56**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : Vinayakanagara, 5th Main Road

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NEW TECHNOLOGIES TO INNOVATE

NC/QC/YPD/2020-21/W5-KK-BC2 **Date: 24-08-2021**

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.
{Project*: Improvements of roads and drains at Kattigenahalli to Kogilu Main and Cross Road in Ward No.05 (Jakkur) Byatarayanapura Sub division.}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s. R.M. Enterprises, Bangalore.

TEST RESULTS

A. Type of Construction : **Bituminous Concrete**
1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **5.41%**

2. **Gradation Test**
TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)
19.0	**100**	100
13.2	**94.25**	90-100
9.5	**81.10**	70-88
4.75	**67.45**	53-71
2.36	**53.80**	42-58
1.18	**41.75**	34-48
0.600	**33.50**	26-38
0.300	**25.35**	18-28
0.150	**16.25**	12-20
0.075	**8.40**	4-10

The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : Vinayakanagara, 6th Main Road

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NEW TECHNOLOGIES TO INNOVATE

NC/QC/YPD/2020-21/W5-KK-BS2 Date: 24-08-2021

1.TEST REPORT ON BITUMINOUS MIXES :
(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for BC mix sample.
{Project*: Improvements of roads and drains at Kattigenahalli to Kogilu Main and Cross Road in Ward No.05 (Jakkur) Byatarayanapura Sub division.}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s. R.M. Enterprises, Bangalore.

TEST RESULTS

Table 1: Properties of BC (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	1347	900
2	Marshall Flow at 60°C, mm.	3.61	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : Vinayakanagara, 6th Main Road

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NEW TECHNOLOGIES TO INNOVATE

NC/QC/YPD/2020-21/W5-KK-BC3 **Date: 27-08-2021**

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.
{Project*: Improvements of roads and drains at Kattigenahalli to Kogilu Main and Cross Road in Ward No.05 (Jakkur) Byatarayanapura Sub division.}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s. R.M. Enterprises, Bangalore.

TEST RESULTS

A. Type of Construction : **Bituminous Concrete**
1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **5.42 %**

2. **Gradation Test**
TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)
19.0	**100**	100
13.2	**98.70**	90-100
9.5	**82.30**	70-88
4.75	**66.95**	53-71
2.36	**51.40**	42-58
1.18	**43.70**	34-48
0.600	**32.05**	26-38
0.300	**24.35**	18-28
0.150	**17.80**	12-20
0.075	**8.60**	4-10

The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : Vinayakanagara, 6th B Main Road

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NEW TECHNOLOGIES TO INNOVATE

NC/QC/YPD/2020-21/W5-KK-BS3 Date: 27-08-2021

1.TEST REPORT ON BITUMINOUS MIXES :
(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for BC mix sample.
{Project*: Improvements of roads and drains at Kattigenahalli to Kogilu Main and Cross Road in Ward No.05 (Jakkur) Byatarayanapura Sub division.}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s. R.M. Enterprises, Bangalore.

TEST RESULTS

Table 1: Properties of BC (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	1357	900
2	Marshall Flow at 60°C, mm.	3.46	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : Vinayakanagara, 6th B Main Road

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NEW TECHNOLOGIES TO INNOVATE

NC/QC/YPD/2020-21/W5-KK-BC4 **Date: 28-08-2021**

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.
{Project*: Improvements of roads and drains at Kattigenahalli to Kogilu Main and Cross Road in Ward No.05 (Jakkur) Byatarayanapura Sub division.}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s. R.M. Enterprises, Bangalore.

TEST RESULTS

A. Type of Construction : **Bituminous Concrete**
1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **5.41%**

2. **Gradation Test**
TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)
19.0	**100**	100
13.2	**96.05**	90-100
9.5	**81.45**	70-88
4.75	**65.95**	53-71
2.36	**52.25**	42-58
1.18	**44.70**	34-48
0.600	**31.45**	26-38
0.300	**24.90**	18-28
0.150	**17.60**	12-20
0.075	**6.15**	4-10

The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : Babanagara, 1st Main 1st Cross Rd

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NEW TECHNOLOGIES TO INNOVATE

NC/QC/YPD/2020-21/W5-KK-BS4 **Date: 28-08-2021**

1.TEST REPORT ON BITUMINOUS MIXES :
(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for BC mix sample.
{Project*: Improvements of roads and drains at Kattigenahalli to Kogilu Main and Cross Road in Ward No.05 (Jakkur) Byatarayanapura Sub division.}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s. R.M. Enterprises, Bangalore.

TEST RESULTS

Table 1: Properties of BC (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1368**	900
2	Marshall Flow at 60°C, mm.	**3.45**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : Babanagara, 1st Main 1st Cross Rd

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NEW TECHNOLOGIES TO INNOVATE

NC/QC/YPD/2020-21/W5-KK-BC5 **Date: 28-08-2021**

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.
{Project*: Improvements of roads and drains at Kattigenahalli to Kogilu Main and Cross Road in Ward No.05 (Jakkur) Byatarayanapura Sub division.}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s. R.M. Enterprises, Bangalore.

TEST RESULTS

B. Type of Construction : **Bituminous Concrete**
1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **5.41 %**

2. **Gradation Test**
TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)
19.0	**100**	100
13.2	**98.45**	90-100
9.5	**82.90**	70-88
4.75	**63.45**	53-71
2.36	**55.75**	42-58
1.18	**42.50**	34-48
0.600	**31.85**	26-38
0.300	**22.10**	18-28
0.150	**18.60**	12-20
0.075	**7.45**	4-10

The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : Babanagara, 2nd Cross Rd

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NEW TECHNOLOGIES TO INNOVATE

NC/QC/YPD/2020-21/W5-KK-BS5 **Date: 28-08-2021**

1.TEST REPORT ON BITUMINOUS MIXES :
(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for BC mix sample.
{Project*: Improvements of roads and drains at Kattigenahalli to Kogilu Main and Cross Road in Ward No.05 (Jakkur) Byatarayanapura Sub division.}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s. R.M. Enterprises, Bangalore.

TEST RESULTS

Table 1: Properties of BC (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1365**	900
2	Marshall Flow at 60°C, mm.	**3.36**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : Babanagara, 2nd Cross Rd

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NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

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NEWZEN CONSULTANTS BANGALORE

NEW TECHNOLOGIES TO INNOVATE

NC/QC/YPD/2020-21/W5-KK-BC6 Date: 30-08-2021

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.
{Project*: Improvements of roads and drains at Kattigenahalli to Kogilu Main and Cross Road in Ward No.05 (Jakkur) Byatarayanapura Sub division.}

Ref.: Material testing/PMC/20-21,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: M/s. R.M. Enterprises, Bangalore.

TEST RESULTS

B. Type of Construction : **Bituminous Concrete**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **5.41%**

2. **Gradation Test**

TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)
19.0	100	100
13.2	96.80	90-100
9.5	83.25	70-88
4.75	66.90	53-71
2.36	52.65	42-58
1.18	45.15	34-48
0.600	33.70	26-38
0.300	22.55	18-28
0.150	18.45	12-20
0.075	6.15	4-10

The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : Babanagara, Cross Rd 03

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Asst. Executive Engineer
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NEW TECHNOLOGIES TO INNOVATE

NC/QC/YPD/2020-21/W5-KK-BS6 Date: 30-08-2021

LTEST REPORT ON BITUMINOUS MIXES :
(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for BC mix sample.
{Project*: Improvements of roads and drains at Kattigenahalli to Kogilu Main and Cross Road in Ward No.05 (Jakkur) Byatarayanapura Sub division.}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s. R.M. Enterprises, Bangalore.

TEST RESULTS

Table 1: Properties of BC (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1359**	900
2	Marshall Flow at 60°C, mm.	**3.46**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : Babanagara, Cross Rd 03

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